APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,680	09/29/2000	Megumi Yamaoka	MAT-8021US	3463

7590   01/26/2005

Lawrence E Ashery
Ratner & Prestia
One Westlakes Berwyn Suite 301
P O Box 980
Valley Forge, PA 19482-0980

EXAMINER
CHANG, JON CARLTON

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *9/28/04, 10/6/04, 12/27/04*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☒ All   b)☐ Some * c)☐ None of:

   1.☒ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date *12/27/04*.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

September 28, 2004 has been entered.

Response to Applicants' Amendment and Arguments

2.   The amendment filed October 6, 2004, has been entered and made of record.

In response to the amendment, the rejection under 35 U.S.C. § 112, first

paragraph, and the objection to the drawings are withdrawn.

Applicants' remarks on page 8 with regard to "updating" have been fully

considered and are persuasive. The disclosure refers to "incrementing" which,

according to Applicants, corresponds to "updating."

The Examiner notes that the current form of the claims no longer contain the

language which caused the Examiner to withdraw the rejection relying on U.S. Patent

6,463,176 to Matsugu, in the final Office Action, mailed May 26, 2004.

Claim Objections

3.   Claims 5 and 6 are objected to because of the following informalities:

It appears that claim 5 should refer to step (e) rather then step (d), and claim 6 should refer to step (f) rather than step (e).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4.   Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 2, and 11 recite "updating a score". This is indefinite because "updating" implies performing an action on something that exists, but the claim has not established a "score" prior to the "updating" step. Further, a "score" is not inherent to a "position" as disclosed in Applicants' specification. Rather, it appears the score needs to be determined.

Claims 7, 8 and 9, recite "counting a score". This is indefinite because "counting" implies performing an action on something that exists, but the claim has not established a "score" prior to the "counting" step. Further, a "score" is not inherent to a "position" as disclosed in Applicants' specification. Rather, it appears the score needs to be determined.

Claims not mentioned specifically depend from indefinite antecedent claims.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.   Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S.

Patent 6,463176 to Matsugu et al. (hereinafter "Matsugu").

As to claim 1, Matsugu discloses an image recognizing method

comprising the steps of:

(a) dividing an input image into local-segments (column 5, lines 9-12);

(b) registering a learning image into a learning image database (column 5,

lines 28-30);

(c) selecting a local-segment from the plurality of local-segments (column

5, lines 28-30; as each local-segment is matched, it must first be selected);

(d) extracting a learning-local-segment from the learning image database

which is similar to the selected local-segments (column 5, lines 28-30; each local

feature element pattern is the learning-local-segment);

(e) relating the extracted learning-local segment extracted the selected

local-segments (column 5, lines 28-42);

(f) estimating a position of an object-to be identified in the input image

from coordinates of the selected local-segments and coordinates of the learning-

local-segment (column 4, lines 58-59; column 8, lines 1-9);

(g) updating a score of the estimated position in the input image (column

8, lines 1-18; with each iteration, F(k,p) is updated); and

(h) repeating steps (c), (d), (e), (f) and (g) for each local-segment of the

plurality of local-segments (all of the local-segments are matched, column 5,

lines 26-31, therefore the steps are repeated for each local-segment);

(i) judging that the object to be identified is present at the first position

when the score is greater than a predetermined number (column 8, lines 6-18).

Regarding claim 2, Matsugu discloses an image recognizing method

comprising the steps of:

(a) dividing an input image into local-segments (column 5, lines 9-12;

column 11, lines 27-29));

(b) dividing a learning image into learning-local-segments having a same

size as the local-segments and making subsets of some of the learning-local-

segments which are similar to each other (column 11, lines 27-29 and 52-58;

note the set representing a figure concept; column 5, lines 27-28);

(c) for each of the subsets of learning-local-segments, registering image

data of a representative learning-local-segment and coordinates of all the

learning-local-segments of the corresponding subset into a same-type window

database (column 11, lines 52-58);

(d) selecting a local-segment from the plurality of local-segments (column 11, lines 28-29; Fig.8; as each local-segment is matched, it must first be selected)

(e) extracting a representative learning-local-segment from the same-type window database which is similar to one of the local-segments (column 11, lines 39-50);

(f) relating the selected local-segment to a subset of the subsets which includes the representative learning-local-segment (column 11, lines 60-64);

(g) estimating a position of an object to be identified in the input image from coordinates of the selected local-segment and coordinates of the representative learning-local-segment of the group (column 12, lines 3-5);

(h) updating a score of the estimated position in the input image (in the matching of step S85, which corresponds to the disclosure at, column 8, lines 1-18, with each iteration, $F(k,p)$ is updated);

(i) repeating steps (d), (e), (f), (g) and (h) for each local-segment of the plurality of local-segments (all of the local-segments are matched, therefore the steps are repeated for each local-segment)

(j) judging that the object to be identified is present at the first position when the score is greater than a predetermined number (column 12, line 12-16).

With regard to claim 3, Matsugu discloses the image recognizing method according to claim 1, wherein:

said step (b) comprises the step of registering the learning image into the

learning image database by a characteristic of an object to be identified (column

9, lines 41-46);

said step (d) comprises the step of extracting the learning-local-segment

which is similar to the one of the local-segment from the learning image database

by the characteristic (column 9, lines 41-46); and

said step (g) comprises the step of counting a pair of one of the local-

segments and a learning-local-segment by the character (column 10, lines 15-

16).

As to claim 4, Matsugu discloses the image. recognizing method

according to claim 2, wherein said step (c) comprises the step of, for each subset

of learning-local-segments, registering image data of the representative learning-

local-segment and coordinates of all the of the learning-local-segments of the

corresponding subset and a characteristic of an object to be identified into the

same-type window database (column 11, lines 52-58; column 12, lines 3-4).

Regarding claim 5, Matsugu discloses the image recognizing method

according to claim 1, wherein the step (d) comprises the steps of:

(d-1) calculating a sum of one of (i) each square of a difference between a

pixel value of the one of the local-segment and a pixel value of the learning-local-

segments (column 5, lines 31-33) and (ii) each absolute of the difference

between the pixel value of the selected local-segment and the pixel value of the

one of the learning-local segments for each learning-local-segment; and

(d-2) extracting a pair of one of the local-segments and a learning-local-segment which has minimum one of the sum (column 5, lines 34-42); and

and step (e) includes the step of relating the selected local-segment to the learning-local-segment in the pair extracted in said step (d-1) (column 5, lines 27-30).

Regarding claim 6, Matsugu discloses the image recognizing method according to claim 2, wherein said step (e) comprises the steps of:

(e-1) calculating a sum of one of (i) each square of a difference between a pixel value of the one of the local -segment and a pixel value of the representative learning-local-segment (column 5, lines 31-33) and (ii) each absolute of the difference between the pixel value of the selected local-segment and the pixel value of the one of the representative learning-local-segments for each learning-local-segment, and

(e-2) extracting a pair formed of the selected local-segment and a representative learning local-segment for which the sum is minimized (column 5, lines 34-42); and

step (f) includes the step of relating the one of the local-segment to the representative learning-local-segment in the pair extracted in said step (e-2) (column 5, lines 27-30).

Claim 7 is an apparatus claim which corresponds to method claim 1. The discussion provided above for claim 1 is applicable to claim 7, in view of Matsugu's apparatus (e.g., Fig.1A).

Claim 8 is an apparatus claim which corresponds to method claim 2. The

discussion provided above for claim 2 is applicable to claim 8, in view of

Matsugu's apparatus (e.g., Fig.1A).

With regard to claim 9, the discussions provided above for claims 1, 3 and

7 are applicable.

As to claim 10, Matsugu discloses the image recognizing apparatus

according to claim 8, wherein said learning means includes:

similar window integrating means for making the subsets of learning-

local-segments which are similar to each other stored in the learning image

database and for releasing image data of a representative learning-local-

segment of each subset and the coordinates of all the some of the learning-local-

segments in each subset (column 11, lines 52-58; column 12, lines 3-4; note the

lattice space inherently possesses windows, Fig.9, etc.); and

same-type window database for storing the image data of the

representative learning-local-segment of the group and the coordinates of all the

some of the learning-local-segments in the group (column 11, line 35; storage

unit A4).

Claim 11 is drawn to a computer-readable storage medium holding a

program for making a computer carry out an image recognizing method, the

method corresponding to the method of claim 1. The discussion provided above

for claim 1 is applicable to claim 11. Note that Matsugu's apparatus (Fig.1A) is a

CPU-based system, which inherently includes a computer-readable storage

medium. Note also column 5, lines 1-3.

Contact Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jon Chang whose telephone number is (703)305-8439.

The examiner can normally be reached on M-F 8:00 a.m.-6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Jon Chang
Primary Examiner
Art Unit 2623

Jon Chang
January 24, 2005